

Patent Claims

1. A linear movement guide for translatory relative movement of objects to be moved along a guide axis, comprising a rail on which at least one carrying surface, which extends parallel to the guide axis, is provided; a carriage which comprises at least one loop of roller bodies, wherein the loop of roller bodies is a closed loop for the circulation of roller bodies, wherein the roller bodies, which are arranged in the loop of roller bodies of the carriage, during a relative movement between the carriage and the rail, for the transfer of loads, run through a carrying area of the loop of roller bodies and in this process are positioned both against the carrying surface of the rail and against the carriage, at least essentially free of any organic lubricants, wherein at least some of the roller bodies comprise two or more different materials with which in the roller bodies a core as well as, for the purpose of creating a contact surface between the respective roller body and the rail, a zone which surrounds the core is formed, wherein the material, of which there is at least one, of the contact surfaces of the roller bodies differs from the material, of which there is at least one, of which the running surface of the rail is made, as well as comprising several separating-elements which in the loop of roller bodies are arranged between two roller bodies for preventing any contact between the two respective roller bodies.
2. The linear movement guide according to claim 1, wherein at least several, preferably all, separating-elements are interconnected.

3. The linear movement guide according to claim 1, wherein at least some of the separating-elements are arranged loosely between two roller bodies.
4. The linear movement guide according to claim 1, wherein the core of the roller bodies is made of a metal material.
5. The linear movement guide according to claim 4, characterised in that the metal material is a roller bearing steel.
6. The linear movement guide according to claim 1, wherein the zone surrounding the roller bodies comprises a hard material and/or dry lubricant.
7. The linear movement guide according to claim 6, wherein said zone surrounding the roller bodies comprises graphite-like or adamantine carbon, tungsten carbide, titanium carbide, silicon nitride, a chromium compound, tungsten disulphide and/or molybdenum disulphide.
8. The linear movement guide according to claim 6, wherein said zone surrounding the roller bodies comprises a ceramic material.
9. The linear movement guide according to claim 1, wherein said lubricant is a dry lubricant.
10. The linear movement guide according to claim 6, wherein said dry lubricant comprises MoS₂, WS₂, graphite or PTFE.
11. A linear movement guide, in particular according to claim 1, comprising at least one separating-element which essentially moves along with the roller bodies

in a translatory sense and which comprises a freely rotatable spacer rotary body.

12. A linear movement guide, in particular according to claim 11, wherein said the separating-elements form part of a ball chain and comprise a geometric shape as a result of which in the region of a deflection of the loop of roller bodies, jamming of the roller bodies occurs due to a curvature in the ball chain.